

Notice of Allowability

Application No.

09/966,958

Examiner

Sin J. Lee

Applicant(s)

LU ET AL.

Art Unit

1752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 11-21-03 and 11-24-03.
2. ☒ The allowed claim(s) is/are 1,3-11,13 and 14.
3. ☒ The drawings filed on 28 September 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 - (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No. _____.
 - (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
 - (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the margin according to 37 CFR 1.121(d).

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1 <input type="checkbox"/> Notice of References Cited (PTO-892) | 5 <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2 <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6 <input type="checkbox"/> Interview Summary (PTO-413), Paper No. _____. |
| 3 <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No. _____ | 7 <input type="checkbox"/> Examiner's Amendment/Comment |
| 4 <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8 <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9 <input type="checkbox"/> Other _____ |

REASONS FOR ALLOWANCE

1. Applicants canceled claims 2 and 12.
2. The following is an examiner's statement of reasons for allowance: As previously indicated, Ushirogouchi et al'101 uses triphenylsulfonium trifluoromethane sulfonate as their photoacid generator, and the reference does not teach or suggest the use of the present photoactive compound of formula (2) which is claimed in present claim 1. Also, the prior art teaches the use of light having wavelength of 340 nm or more and thus does not teach or suggest the present step of image-wise exposure at the wavelength below 260 nm as presently required in claim 11. Also, as previously indicated, Havard et al (*Macromolecules* 1999, vol.32, pg.86-94) teaches present photoacid generator of claims 1 and 8, however, the reference does not teach the present polymer of the formula (1). Also, the reference does not teach or suggest the equivalence of its PAG to triphenylsulfonium trifluoromethane sulfonate, which is taught in Ushirogouchi et al. Also, as previously indicated, Kanda et al (*Advances in Resist Technology and Processing XVII*, vol.3999, pg.881-889) uses AZ R200 coating material which, according to present specification, is a mixture of polyvinylacetal and ethylene urea resin (present crosslinker) in a water/isopropanol 94/6 wt.% solution. However, this coating material is not mixed with a photoacid generator, but instead is reacted with acid (which is not a photoacid generator) in RELACS process (Resolution Enhancement Lithography Assisted by Chemical Shrink).

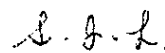
For the reasons stated above, present invention is distinguishable over the cited prior arts.

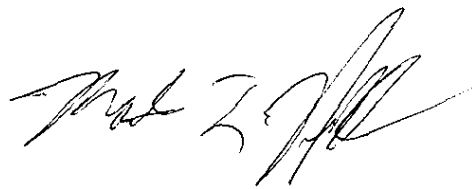
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

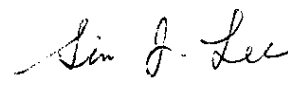
3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sin J. Lee whose telephone number is (571)272-1333. The examiner can normally be reached on Monday-Friday from 9:00 am EST to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark F. Huff, can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


S. Lee
December 28, 2003


MARK F. HUFF
SUPERVISOR/CHIEF EXAMINER
TECHNOLOGY CENTER 1700


Sin J. Lee
Patent Examiner
Technology Center 1700